



RESEARCH DEPARTMENT

The service areas of the Holme Moss television and v.h.f. sound transmitters

TECHNOLOGICAL REPORT No. K-173

1964/35

**THE BRITISH BROADCASTING CORPORATION
ENGINEERING DIVISION**

ADDENDUM

RESEARCH DEPARTMENT - BRITISH BROADCASTING CORPORATION

Technological Report No. K-173

(1964/35)

THE SERVICE AREAS OF THE HOLME MOSS TELEVISION AND V.H.F. SOUND TRANSMITTERS

The service area of the Holme Moss Band II transmission had never been surveyed. When the survey was started in April 1961 it was decided to include also a check of the Band I service area. The preliminary survey has never been considered satisfactory on account of the small number of points measured at the time. Because of the pressure of more urgent work, the measurements extended over the period April 1961 to November 1963. The Band I measurements give more detailed information of the service area, and largely confirm the preliminary survey. It is of interest to note that in the latest measurements 50% of the towns are within ± 2 dB and 90% are within ± 6 dB of the preliminary survey.

RESEARCH DEPARTMENT

**THE SERVICE AREAS OF THE HOLME MOSS
TELEVISION AND V.H.F. SOUND TRANSMITTERS**

Technological Report No. K-173
(1964/35)

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June 1964

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THE SERVICE AREAS OF THE HOLME MOSS
TELEVISION AND V.H.F. SOUND TRANSMITTERS

SUBJECT

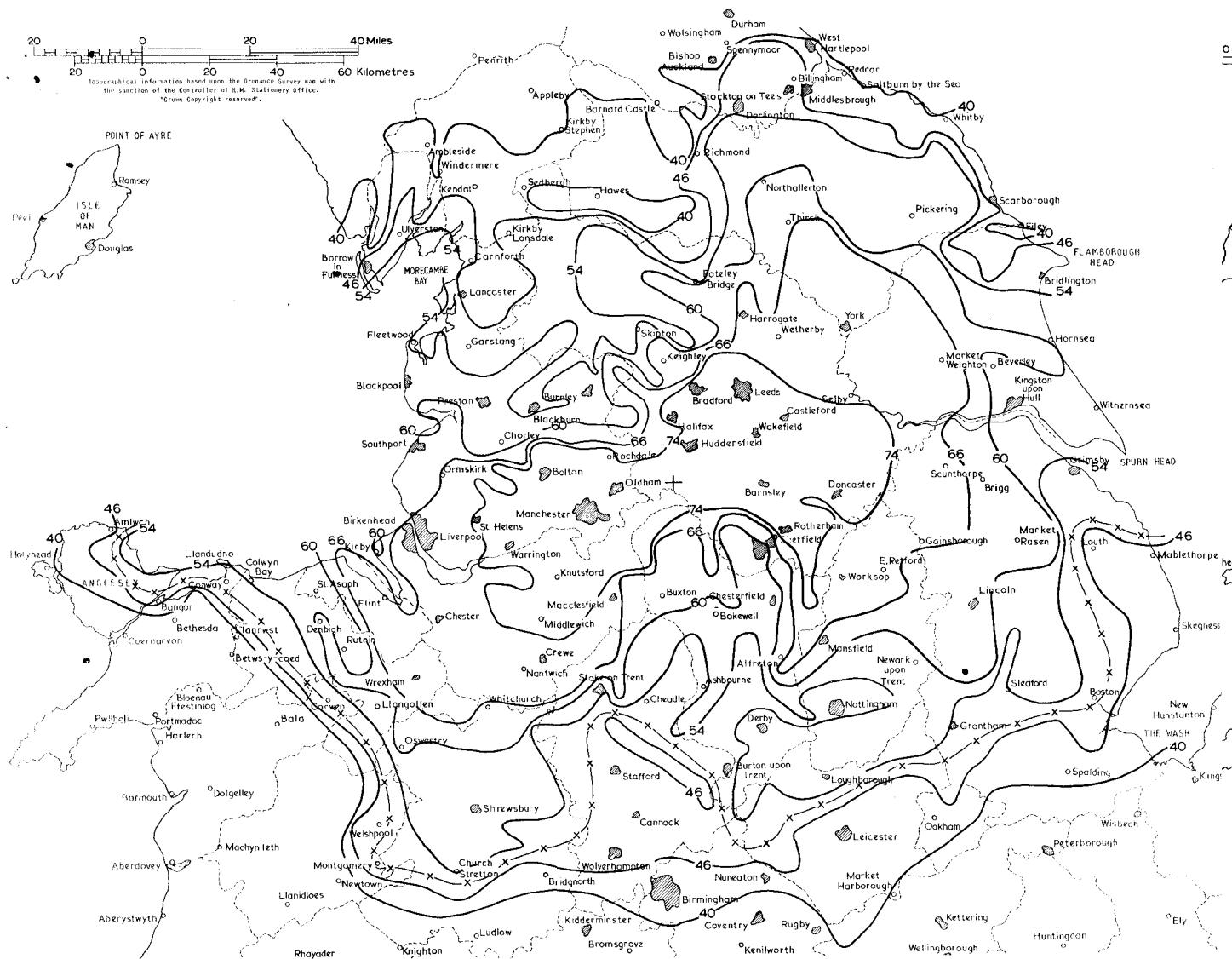
This report gives the results of a re-survey of the Holme Moss television transmission and a survey of the v.h.f. sound transmission. The re-survey of the television transmission has been made in more detail than was possible when the original survey was made.

1. SUMMARIZED DESCRIPTION OF TRANSMITTERS

	Television	V.H.F. Sound
Band	I	II
Channel	2	-
Frequencies	Vision: 51.75 Mc/s Sound: 48.25 Mc/s	Light: 89.3 Mc/s Third: 91.5 Mc/s Home: 93.7 Mc/s
Site Height (above mean sea level)	1720 ft (524 m)	1720 ft (524 m)
Aerial Height (above ground level)	735 ft (224 m)	647 ft (197 m)
Transmitter Power	50 kW (one unit)	20 kW (two 10 kW units)
Aerial	Two tiers of four dipoles	Eight tiers of four slots
E.R.P.	100 kW	113 kW
Polarization	Vertical	Horizontal
H.R.P.	Omnidirectional	Omnidirectional

2. SURVEY RESULTS

Maps T.591 and F.185 show the field strength contours for the television and v.h.f. sound transmissions respectively.



Map T.591 - HOLME MOSS

Band I Channel 2 (51.75 Mc/s) (Measured)

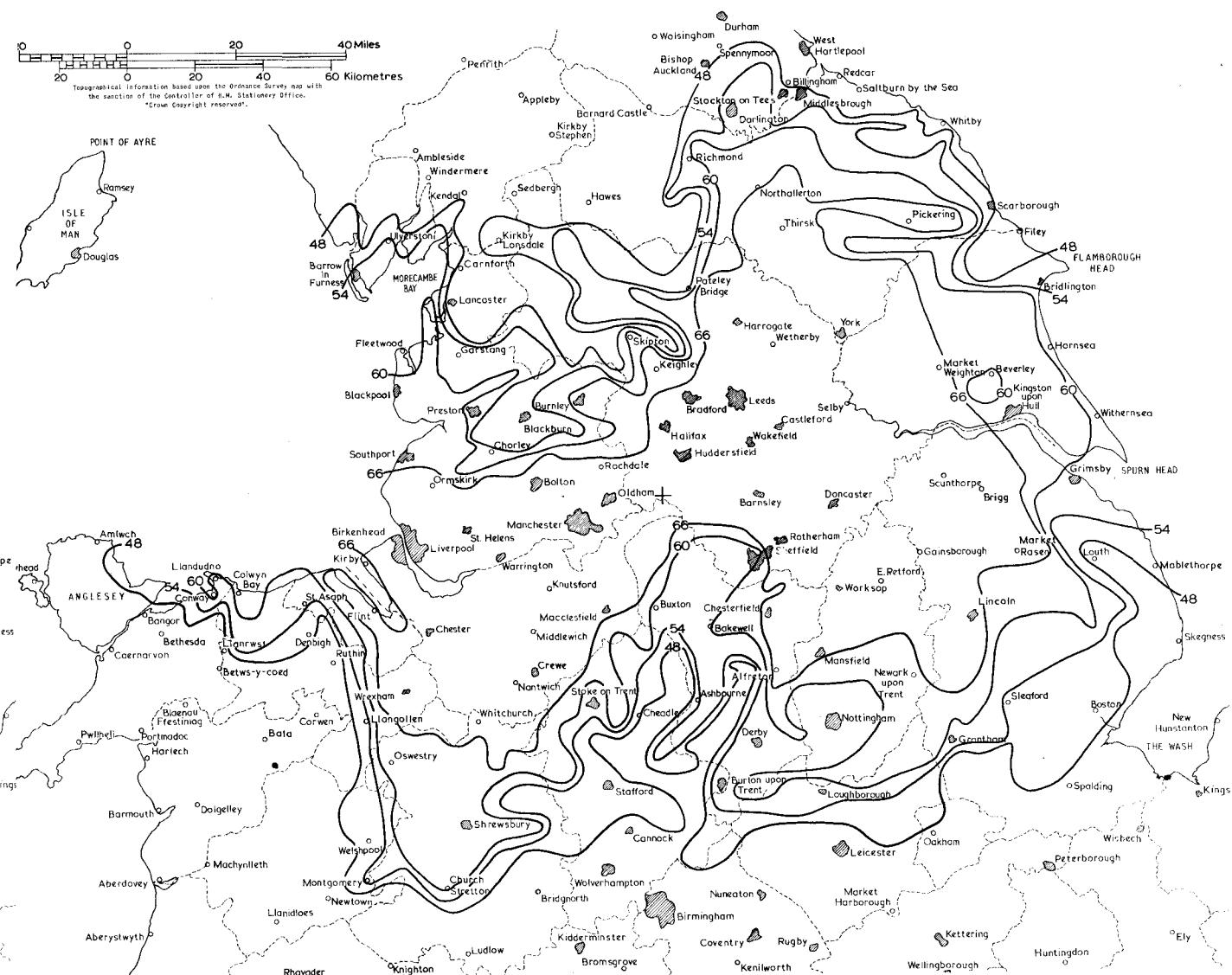
SITE HEIGHT: 1,720 ft (524 m) a.m.s.l. POLARIZATION: VERTICAL

AERIAL HEIGHT: 735 ft (224 m) a.g.l. AERIAL: TWO TIERS OF FOUR DIPOLES (PHASE ROTATION)

E.R.P.: 100 kW H.R.P.: OMNIDIRECTIONAL

NOTES:

1. The contours represent the field strength in decibels (dB) relative to 1 μ V/m at 30 ft (9.1 m) above ground exceeded at 50% of receiving sites in a given locality. The value exceeded at 90% of receiving sites may be as much as 10 dB below the value indicated by the contours, particularly in hilly and built-up areas.
2. —x—x—x— Limit of service area free from perceptible co-channel interference from all U.K. co-channel transmitters for 90% of the time based on a protection ratio of 45 dB with a reduction of 10 dB for cross polarization and 10 dB for frequency offsets, allowance being made for receiving aerial directivity.



Map F. 185 - HOLME MOSS

Band II (Measured)

(Light 89.3 Mc/s; Third 91.5 Mc/s; Home 93.7 Mc/s)

SITE HEIGHT: 1,720 ft (524 m) a.m.s.l. POLARIZATION: HORIZONTAL

AERIAL HEIGHT: 647 ft (197 m) a.g.l. AERIAL: EIGHT TIERS OF FOUR SLOTS

E.R.P.: 113 kW H.R.P.: OMNIDIRECTIONAL

NOTE:

The contours represent the field strength in decibels (dB) relative to 1 μ V/m at 30 ft (9.1 m) above ground exceeded at 50% of receiving sites in a given locality. The value exceeded at 90% of receiving sites may be as much as 10 dB below the value indicated by the contours, particularly in hilly and built-up areas.

Contrary to the usual practice, and to reduce the effort of analysis, only the field strength values exceeded at 50% of the locations are given in the Appendix. Nevertheless, if required, the 10% and 90% values for a particular town(s) can be extracted from the field strength records and made available at short notice. The 50% value is given for all towns and villages measured.

3. COMMENTS ON SERVICES

Because of the commanding position of Holme Moss on the Pennine mountain range, the nominal service areas of the transmitters (40 dB(μ V/m) for television and 48 dB(μ V/m) for v.h.f. sound) are exceptionally large. United Kingdom co-channel interference restricts the television service in a southerly direction to about 48 to 50 dB(μ V/m) but during the summer months interference from distant Continental transmitters propagated by the Sporadic E layer is so severe that the service is sometimes restricted to field strengths greater than 74 dB(μ V/m). This is of little consequence in a southerly direction because of the generous overlap with the service area of the Sutton Coldfield transmitter, but large and very densely populated areas of Yorkshire, Lancashire and Lincolnshire are subject to this interference. This situation will be largely remedied when the East Lincs. and West Lancs. Band III transmitters come into service. Meantime, the Barrow/Lancaster area, Sheffield and Skegness are served by local Band I transmitters, while a further low-power Band I transmitter is being built to serve Scarborough and Filey.

The v.h.f. sound service area is not restricted by co-channel interference.

APPENDIX

Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Abergele	57	58	Banks	59	66	Bolsover	75	83
Accrington	54	51	Barlborough	78	82	Bolton	84	88
Ackworth			Barnard			Bolton-le-		
Moor Top	82	86	Castle	37	44	Sands	40	
Addingham	60	53	Barnoldswick	60	54	Bootle		
Adlington	63	62	Barnsley	83	86	(Lancs.)	67	70
Adwick le			Barnton	74	81	Boroughbridge	70	74
Street	75	78	Barrowford	57	55	Boston	53	51
Ainstdale	66	78	Barrow in			Boston Spa		74
Albrighton			Furness	48	58	Bottesford	57	
Alderley Edge	83	88	Barrow upon			Bourne	41	39
Alford	41	44	Humber		70	Bowes	41	
Alfreton	65		Barton upon			Bowness on		
Alrewas		47	Humber	57	68	Windermere	38	38
Alsager	73	80	Batley	72	73	Bracebridge		
Altrincham			Bawtry	68	73	Heath		81
and Hale	82	89	Beaumaris	49		Bradford	75	75
Amlwch	42		Bebington	71	78	Bramhope	79	88
Ashbourne	53	50	Bedale	55	62	Branston	60	64
Ashby de la			Beeston			Breaston and		
Zouch	53	57	(Notts.)	54		Draycott		56
Ashton in			Beighton	68	70	Bridgnorth	42	38
Makerfield	80	87	Belmont	87	90	Bridlington	48	52
Ashton under			Belper	54	55	Brierfield	54	56
Lyne	78	79	Beverley	57	54	Brigg	61	70
Askern		72	Biddulph	69		Brighouse	>75	>74
Astley			Billinge	74	78	Brotton	46	48
Bridge	84	88	Bingley	62	62	Buckley	74	76
Atherstone	48		Bingham	56		Burley in		
Atherton	77	80	Birdwell	87	93	Wharfedale	65	64
Audlem	68	71	Birkenhead	67	70	Burncross and		
Audley	70	71	Birstall	81	81	Chapeltown	67	70
Aysgarth	46		Bishop			Burnley	60	60
Ayton		64	Auckland	38		Burscough	69	74
			Bishops			Burton	65	70
Bacup	62	60	Castle		40	Burton Agnes	57	
Baildon	75	79	Blackburn	52	49	Burton in		
Bakewell	55	57	Blackpool	58	61	Lonsdale	50	47
Bala	40		Bollington	65	67	Burton upon		
Bamber Bridge	55	53	Bollington			Trent	51	56
Bangor	51		Cross	77	80	Burton Joyce	47	

Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Bury	82	90	Conway	52	61	Eckington	63	66
Buxton	60	55	Coppull	65	67	Edgeworth	77	77
			Cottingham	62	59	Edwinstone	63	71
Cadishead	81	86	Cowling	47	43	Elland	71	68
Caergwrle	70	78	Coxhoe	46	49	Ellesmere	60	66
Caernarvon	37		Craven Arms	42	41	Ellesmere		
Cannock	48	43	Crewe	70	76	Port	70	74
Carcroft	75	77	Crigglestone	86	90	Elloughton		74
Carnforth	48	48	Crosby	65	67	Euxton	60	61
Castleford	81	87	Croston	60	65			
Catcliffe	71	74	Crowle		76	Failsworth	82	85
Catterick		53				Farington	61	63
Cawood	71	77	Dalton in Furness	45	49	Farnworth	87	93
Chapel en le Frith	62	62	Darlington	52	55	Featherstone	84	88
Chatburn	61	59	Darton	91	97	Filey	43	39
Cheadle (Staffs.)	50	51	Darwen	58	53	Fitzwilliam	82	87
Cheadle and Gatley			Dawley		55	Flamborough	51	
Chester	66	69	Deganwy	39	46	Fleetwood	53	57
Chesterfield	58	67	Denbigh	64		Flint	68	70
Chinley	60	58	Denton	80	83	Follifoot	88	94
Chirk	62	64	Derby	55	58	Formby	64	70
Chorley	59	56	Dewsbury	88	94	Forsbrook		51
Church	59	57	Disley	81	82	Foulridge	65	66
Church Stretton			Ditton	71	80	Freckleton	62	67
Clay Cross	58	64	Doncaster	>76	>80	Frodsham	67	71
Clayton le Moors	64		Donington			Fulwood	60	63
Cleckheaton	53	54	(Lincs.)	45	50	Gainsborough	66	73
Cleveleys	82	82	Dronfield	55	62	Galgate	44	46
Clitheroe	60	60	Duffield		52	Garforth	80	85
Cloughton	44	44	Dukinfield	79	78	Gargrave	55	52
Clowne	70	77	Earby	53	47	Garstang	54	57
Codnor			Earl Shilton	52		Gisburn	51	
Collingham	65	65	Easingwold	69	75	Glazebury	81	88
Colne	61	57	East Retford	68	77	Glossop	75	72
Colwyn Bay	57	63	East Rington	68	72	Glusburn	55	52
Congleton	73	74	Eastwood			Gnosall		51
Coningsby			(Notts.)	65		Gobowen	62	64
Connah's Quay	58		Eccleshall		60	Golborne	81	88
			Eccleston	57	63	Goole	71	75
			Eccles and			Gosberton	47	49
			Worsley	79	82	Grange		
						(Ches.)	73	82

Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))		Town	Median Field Strength (dB(μV/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Grange over Sands	63	69	Helsby	61	67	Kearsley	85	92
Grantham	51	58	Hemsworth (Yorks.)	78	79	Kegworth	61	61
Greasby	64	72	Hesketh (Bank and Lane)	65	66	Keighley	62	60
Great Altcar	64	70	Hest Bank	40		Kendal	45	43
Great Ayton	53	60	Heswall	74	85	Kidderminster	37	
Great Budworth	74	76	Heysham	55	61	Kids Grove	68	72
Great Driffield	56	60	Heywood	84	88	Kingston upon Hull	57	62
Great Eccleston	58	60	High Bentham	49	43	Kippax	88	92
Great Harwood	66	72	High Lane	85	92	Kirkburton	91	93
Great Moss	82	88	High Legh	82	87	Kirkby	69	73
Greaves Town	61	63	Hinckley	50		Kirkby in Ashfield	63	71
Green Hammerton	68	73	Hinderwell	44		Kirkby		
Greenod	51		Hindley	71	75	Lonsdale	52	63
Greetland	76	71	Holbeach	44	46	Kirkby		
Grimsargh	61	63	Hollingworth	82	81	Stephen	40	
Grimsby and Cleethorpes	61	63	Holyhead	39		Kirkham	60	62
Guisborough	51	55	Holywell			Kirton		53
Guiseley	41	40	(Flint)	70	79	Kirton in Lindsey	77	80
Halifax	75	79	Hope	68	76	Knaresborough	64	71
Hambleton	92	95	Horbury			Knott End	53	59
Handforth	52	54	Hoylake	84	88	Knottingley	75	77
Harrogate	84	92	Hoyland	51	55	Knutsford		89
Haslingden	68	74	Horton in Ribblesdale	60	57	Lamberhead		
Hatfield	59	56	Horwich	82	90	Green	80	87
Hawes	78	78	Hoylake	66	63	Lancaster	44	42
Haydock	40	31	Hoyland	64	70	Langtoft	40	
Hayfield	79	86	Huddersfield	76	81	Leeds	74	78
Hazel Grove	88	92	Howden	70	77	Leek	60	59
Heanor	62	56	Hucknall	74	81	Leicester	46	
Hebden Bridge	55	56	Huddersfield	54	57	Leigh	80	85
Heckmondwike	64	65	Hyde (near Manchester)	>85	>85	Leyburn	54	56
Hedon	66	61	Ilkeston	74	72	Leyland	55	53
Hellifield	88	89	Ilkley	53	59	Lichfield	52	47
Helmshore	61	65	Ingleton	49	46	Lincoln	61	69
	67	57	Irby	48	43	Lindale	54	61
		60	Irlam	71	79	Litherland	67	75
				83	90	Littleborough	64	62
						Little Hulton	82	86
						Little Lever	82	86

Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Little Sutton	72	81	Martin	56	58	Normanton	80	87
Liverpool	69	73	Matlock	47	57	Northallerton	60	63
Llandudno	56	55	Matlock Bath	47	49	Northwich	76	81
Llanfair- fechan	37		Medbourne	40		Norton and		
Llangollen	57	48	Melbourne	57	61	Malton	60	67
Loftus	36	36	Melton			Nottingham	53	57
Long Eaton	55	55	Mowbray	46	48	Nuneaton	46	
Longridge	64	68	Menai Bridge	49				
Long Preston	66	63	Messingham	72		Oakengates	66	65
Longton			Mexborough	73	80	Oakham	44	41
(Lancs.)	59	60	Middleham	33		Oldham	82	84
Loscoe		58	Middlesbrough	46	49	Ormskirk	66	70
Lostock	61	65	Middleton (nr	80	84	Orrell Post	79	85
Loughborough	60	57	Manchester)			Oswaldtwistle	55	50
Louth	44	45	Middleton			Oswestry	61	64
Luddenden- Foot			St. George			Otley	64	63
Lutterworth	78	77	Middlewich	76	79	Oxenhope	58	56
	42		Millom	50	50			
Lymm	81	89	Milnrow	71	70	Padiham	54	56
Lytham	61	65	Mirfield	82	80	Parbold	60	59
Mablethorpe	44	49	Mold	66	64	Patrington	57	61
Macclesfield	71	73	Montgomery	54	57	Pateley		
Madeley			Morecambe	51	56	Bridge		53
(Salop)			Moreton	65	71	Pendlebury	91	96
Madeley			Morley	81	86	Penistone	91	93
Maghull	50		Mosbrough	64	64	Pensby	73	82
Maghull	62	68	Mossley	77	72	Penwortham	62	66
Malpas	71		Much Wenlock			Pickering	58	69
Maltby	77	81	Mytholmroyd	65	63	Pilling	55	62
Manchester	80	84	Nantwich	78	71	Pinchbeck		48
Mansfield	60	69	Nelson	53	55	Platt Bridge	76	77
Market			Neston	60	67	Pocklington	70	76
Drayton	54	67	Newark upon			Pontefract	77	81
Market			Trent	57	65	Pool	56	55
Harborough	37		Newcastle- under-Lyme	(see 'Potteries')		'Potteries'	59	57
Market Rasen	60	67	New Hey	71	74	Poulton-le- Fylde	57	62
Market			New Mills	79	82	Poynton	81	87
Warsop	67		Newport			Preesall	51	59
Market			(Salop)			Prescot and		
Weighton	67	74	Newton			Whiston	73	79
Marple	93	98	Newton-le-			Prestatyn	60	58
Marsden	75	73	Willows	78	83	Prestbury	77	84
Marske	36	37						

Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Preston	59	59	St. Asaph	55	56	Spofforth	65	67
Prestwich	90	97	St. Helens	74	80	Spondon		56
Pudsey	78	79	Sale	81	88	Stafford	53	51
			Saltburn	36	36	Stainland and		
Queensbury	93	91	Sandbach	74	79	Holywell		
Quorndon		59	Scarborough	45	51	Green	82	81
			Scarisbrick	66	68	Stalybridge	73	73
Radcliffe	85	90	Scunthorpe	70	80	Standish	78	80
Radcliffe on			Sedbergh	45	28	Stapleford		
Trent	57		Selby	73	81	(Notts.)	57	62
Rainford	69	72	Settle	56	48	Staveley		
Ramsbottom	71	72	Shaw	76	73	(Derby)	67	70
Rawden	79	88	Sheffield	See Report		Steeton	47	47
Rawmarsh	75	82		No. K-086		Stockport	81	85
Rawtenstall	64	57	Shepley and			Stocksbridge	90	97
Redcar	45	48	Shelley	91	95	Stockton on		
Rhosllan-			Sherburn in			Tees	47	51
erchrugog	72	81	Elmet	72	73	Stoke-on-		
Rhostyllen	68	75	Shifnal		48	Trent	(see 'Potties')	
Rhuddlan	56	54	Shildon	46		Stokesley	55	62
Rhyl	66	59	Shipley	64	65	Stone		
Ribbleton	61	60	Shotton			(Staffs.)	43	43
Ribchester	57	54	(Flint)	66	66	Straits	58	60
Richmond	47	54	Shrewsbury	56	61	Stourport on		
Ripley			Silsden	68	68	Severn	34	
(Derby)	67	70	Skegness	41	44	Sutton		
Ripon	59	64	Skelmanthorpe	86	88	(Yks. W.R.)	45	43
Ripponden	69	62	Skelmersdale	70	76	Sutton Bridge	35	
Rishton	66	69	Skipton	59	56	Sutton		
Rochdale	77	79	Slaiburn	51	49	Coldfield	46	
Romiley	85	87	Slaithwaite	78	79	Sutton in		
Rotherham	75	78	Sleaford	54	54	Ashfield	68	72
Rothwell	76	79	Sleights	42		Sutton Leach	77	84
Royston	84	88	Smethwick	44		Sutton on Sea	42	
Royton	79	78	Snaith	76		Swadlincote	56	60
Ruabon	69	74	Somercotes	65		Swallow Nest	84	88
Rufford	65	64	Southport	63	66	Swinton		
Rugeley	49	50	Sowerby			(Yks. W.R.)	73	79
Runcorn	79	87	Bridge	77	70	Swinton		
Ruthin	59		Spalding	42	46	(Lancs.)	82	85
			Speke	71	78			
St. Annes on			Spennymoor	40		Tadcaster	70	75
the Sea	60	62	Spilsby	47	46	Tamworth	50	49

Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))		Town	Median Field Strength (dB(μ V/m))	
	Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound		Tele- vision	V.H.F. Sound
Tarleton	65	68	Welshpool	46	49	Wrea Green	60	65
Tarporley	71	78	Wem	60	65	Wrexham	68	74
Thirsk	63	70	Wensley		42			
Thornaby on Tees	46	48	Wesham	61	64	Yeadon	80	85
Thorne		80	West			York	68	75
Thornton (Yks. W.R.)	79	81	Bridgford	62				
Thornton (nr Blackpool)	55	58	Hartlepool	44				
Thornton (nr Liverpool)	67	72	West Kirby	76	80			
Thurnscoe	82	89	Wetherby	56	60			
Tickhill	68		Whaley		77			
Tintwistle	68	72	Bridge		77			
Todmorden	57	55	Whalley	57	61			
Trawden	68	66	Whaplude		40			
Tyldesley	78	83	Whitby					
Ulverston	52	60	(Yorks.)	40	41			
Upholland	81	91	Whitby	70	77			
Uppingham	46		(Ches.)					
Upton (near Birkenhead)	66	71	Whitchurch	64	70			
Urmston	82	89	(Salop)	90	94			
Utley	51	53	Whitefield	57	61			
Uttoxeter	54	58	Whittington					
Waddington (Lincs.)		81	Whittle le	55	49			
Waddington (Yks. W.R.)	67	69	Woods	66	65			
Wainfleet All Saints	43	47	Whitworth	73	80			
Wakefield	83	89	Widnes	68	72			
Walkden	84	88	Wigan	71	79			
Wallasey	66	68	Willaston	84	91			
Walsall	50		Wilmslow	56	54			
Warrington	77	83	Wilshire	41	41			
Waterfoot	59	52	Windermere	76	87			
Wath upon Dearne	79	84	Winterton	66	70			
Weaverham	78	82	Wirksworth	47	49			
Wellington	57	64	Withernsea	77	80			
			Wombwell	54	54			
			Winsford	55	58			
			Winterton	60	57			
			Withernsea	71	77			
			Wombwell	84	90			
			Winsford	41	<40			
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